IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	Art Unit: 2611
HODGE	)	Examiner: Grant, Chris
	)	Tel: (703) 305-4755
Serial No.: Not Assigned	)	
	)	
Filed: May 14, 2001	)	
	)	
For: INTERACTIVE DIGITAL	)	
PROGRAM MATERIAL	)	
ENCODER AND SYSTEM	)	
	)	
	)	
	)	

ET 16105021S US

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being deposited
with the United States Postal Service with sufficient postage
as Express Mail, in an envelope addressed to:
     Assistant Commissioner for Patents
     Washington, D.C. 20231

on   _05-14-2001_
        Date   _MARIE MARTIN KERR_

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Examiner Grant:

This preliminary amendment is associated with a continuation application of
parent patent application 09/162,313 filed on 09/28/98. In the parent patent application
all claims were rejected and a final rejection was given. This preliminary amendment
addresses comments made in the Examiner's Office Action dated 02/14/01.

Applicant apologizes for any confusion caused to the Examiner in reviewing
Applicant's prior response.   Applicant kindly requests amendment to the continuation
application as follows.

In the Specification:

a) On page 1, line 5, after the Title, please insert the following paragraph:

-- This patent application is a continuation application of patent application 09/162,313 filed on 09/28/98. --

b) On page 4, line 10, after the Summary of the Invention, please insert the following first paragraph:

-- The present invention applies to Ethernet data frames, including Internet data, video programming material from sources such as Microsoft NetShow Theater, digital audio, digital television, telephony and other such data that can be communicated via an MPEG transport stream. The present invention overcomes and reduces communications incompatibilities and complexities among set top boxes and existing head ends because digital set top boxes are designed to handle MPEG-2 data frames. --

Support for this paragraph is provided in the Abstract of the Disclosure on page 22, lines 11 - 18, and page 22, lines 35 through page 23, line 1. Previously, the Examiner requested the Abstract be limited to 250 words and the following modification complies with the Examiner's request by moving text in the Abstract to the Specification. It is respectfully submitted that this paragraph does not add new matter to the specification.

c) On page 5, after line 27, at the end of the SUMMARY OF THE INVENTION and prior to the BRIEF DESCRIPTION OF THE DRAWINGS please insert the following paragraph.

-- The encoder can dynamically produce multiple content streams from a single stream from video servers or satellites, either time displaced or not, thereby reducing the costly bandwidth production requirements of video servers and satellites. This allows multiple threads of video program material to be transmitted simultaneously or multiple copies of the same thread to be transmitted with time delays between threads for either video-on-demand (VOD) of near-video-on-demand (NVOD) applications. The encoder

dynamically balances bandwidth requirements between Internet, digital television and telephony applications by measuring actual bandwidth utilization and reallocating digital bandwidth and spectrum allocation automatically. This is implemented by the automatic spectrum allocation function and the digital multiplexing functions under firmware and software control and is facilitated by a close loop feedback control algorithms. --

Support for this paragraph is provided in the Abstract of the Disclosure on page 22, line 30 through page 23, line 5. The Examiner has requested the Abstract be limited to 250 words and the following modification complies with the Examiner's request by moving text in the Abstract to the Specification. It is respectfully submitted that this paragraph does not add new matter to the specification.

(d) On page 6, line 9, after the title "Best Mode for Carrying Out the Invention", please insert the following paragraph.

-- Persons of ordinary skill in the art will realize that the following description of the present invention is illustrative only and not any way limiting. Other embodiments of the invention will readily suggest themselves to such skilled persons having the benefit of this disclosure. --

This paragraph is intended to clarify that this disclosure is illustrative in nature and describes the preferred embodiment of the invention at the time this patent was filed. It is respectfully submitted that this paragraph does not add new matter.

(e) On page 6, line 11, after the sentence ending with "program material distribution terminal.", please insert the following sentence.
-- The head end includes the encoder 11, a content server 13, a diplexor 17, and a control computer 19. The head end receives data (not shown) which is loaded to the content server 13. Output from the head end is communicated to a plurality of set top boxes 21, via a head end output line. --

Support for these sentences is provided in page 6 and page 7 of the specification. The sentences are provided to summarize the headend description provided in page 6 and page 7 of the specification. It is respectfully submitted that this paragraph does not add new subject matter to the specification.

f) On page 7, line 38, after the sentence ending "feeding signals to encoder 11." please insert the following sentence.

-- The head end in FIG. 2 is similar to the head end described in FIG. 1. --

Support for this sentence is provided in pages 6 - 8 of the specification. The sentence is provided to summarize the headend description provided in pages 6 - 8 of the specification. It is respectfully submitted that this paragraph does not add new subject matter to the specification.

In the Abstract

a)   On page 22, at line 11 – 18. Please delete the following sentences: "All types of Ethernet data, including Internet data, video program material from sources such as Microsoft Netshow Theater, digital audio and the like can be converted to MPEG-2 bitstreams. This overcomes and reduces communications incompatibilities and complexities among set top boxes and existing head end because all digital set are designed to handle MPEG-2 data frames."

The following modification is intended to comply with Examiner's objection to the disclosure's failure to meet the 25 lines/250 words/1 page requirement.

b)   On page 22, line 30 through page 33, line 5. Please delete the sentences "This allows multiple threads of video program material to be transmitted simultaneously or multiple copies of the same thread to be transmitted with time delays between threads for either video-on-demand (VOD) of near-video-on-demand (NVOD) applications. The encoder dynamically balances bandwidth requirements between Internet, digital television and telephony applications by measuring actual bandwidth utilization and

reallocating digital bandwidth and spectrum allocation automatically. This is implemented by the automatic spectrum allocation function and the digital multiplexing functions under firmware and software control and is facilitated by a close loop feedback control algorithms."

The following modification is intended to comply with Examiner's objection to the disclosure's failure to meet the 25 lines/250 words/1 page requirement.

In the Claims

For purposes of this continuation application, please cancel all claims in the prior patent application.

Please add the following claims:

1.   A head end network system, comprising:

a head end configured to process a plurality of digital data;

a composite wideband RF channel configured to communicate a head end output to a plurality of set-top boxes, said composite wideband channel including,
    a plurality of analog channels,
    a plurality of modulated digital channels within each of said plurality of analog channels;

a plurality of head end encoders housed within said head end,
        each of said plurality of head end encoders configured to receive said plurality of digital data having a first protocol and convert said plurality of digital data to a second protocol;
        each of said plurality of head end encoders configured to generate said plurality of modulated digital channels with said plurality of digital data having said second protocol;

each of said plurality of head end encoders having an encoder output which occupies one of said plurality of analog channels; and

a signal combiner operatively coupled to each of said plurality of head end encoders, said signal combiner configured to stack each said encoder output to generate said composite wideband signal.

2.   The head end network system of claim 1 wherein said first protocol is an Internet Protocol.

3.   The head end network system of claim 1 wherein said first protocol is an Ethernet Protocol

4.   The head end network system of claim 3 wherein said second protocol is a MPEG protocol.

5.   The head end network system of claim 1 further comprising a return path demodulator which receives upstream information from said plurality of set-top boxes.

6.   The head end network system of claim 5 further comprising a content title server operatively coupled to said return path demodulator, said content title server configured to provide orientation for content selected by one of said plurality of set top boxes.

7.   The head end network system of claim 6 further comprising a plurality of content servers in communication with said content title server, said content servers having a plurality of video content formatted as said plurality of digital data.

8.   The head end network system of claim 1 wherein said plurality of digital data comprises digital video.

9.   The head end network system of claim 8 wherein said plurality of digital data comprises Internet data.

10.   The head end network system of claim 9 wherein said plurality of digital data comprises telephony data.

11.   A head end network system, comprising:

a head end configured to process a plurality of digital data;

a composite wideband RF channel configured to communicate a head end output to a plurality of set-top boxes, said composite wideband channel including,

a plurality of analog channels,

a plurality of modulated digital channels within each of said plurality of analog channels;

a plurality of head end encoders housed within said head end,

each of said plurality of head end encoders configured to receive said plurality of digital data having a first protocol and convert said plurality of digital data to a second protocol;

each of said plurality of head end encoders configured to generate said plurality of modulated digital channels with said plurality of digital data having said second protocol;

each of said plurality of head end encoders having an encoder output which occupies one of said plurality of analog channels;

a signal combiner operatively coupled to each of said plurality of head end encoders, said signal combiner configured to stack each said encoder output to generate said composite wideband signal;

a return path demodulator which receives upstream information from said plurality of set-top boxes; and

a content title server operatively coupled to said return path demodulator, said content title server configured to provide orientation for content selected by one of said plurality of set top boxes.

12.   The head end network system of claim 11 further comprising a plurality of content servers in communication with said content title server, said content servers having a plurality of video content formatted as said plurality of digital data.

13.   The head end network system of claim 11 wherein said plurality of digital data comprises digital video.

14.   The head end network system of claim 13 wherein said plurality of digital data comprises Internet data.

15.   The head end network system of claim 14 wherein said plurality of digital data comprises telephony data.

16.   The head end network system of claim 15 wherein said first protocol is an Internet Protocol.

17.   The head end network system of claim 15 wherein said first protocol is an Ethernet Protocol

18.   The head end network system of claim 17 wherein said second protocol is a MPEG protocol.

19.   A head end network system, comprising:

a head end configured to process a plurality of digital data;

a composite wideband RF channel configured to communicate a head end output to a plurality of set-top boxes, said composite wideband channel including,

a plurality of analog channels,

a plurality of modulated digital channels within each of said plurality of analog channels;

a plurality of head end encoders housed within said head end,

each of said plurality of head end encoders configured to receive said plurality of digital data having an Internet protocol and convert said plurality of digital data to a MPEG protocol;

each of said plurality of head end encoders configured to generate said plurality of modulated digital channels with said plurality of digital data having said MPEG protocol;

each of said plurality of head end encoders having an encoder output which occupies one of said plurality of analog channels;

a signal combiner operatively coupled to each of said plurality of head end encoders, said signal combiner configured to stack each said encoder output to generate said composite wideband signal;

a return path demodulator which receives upstream information from said plurality of set-top boxes; and

a content title server operatively coupled to said return path demodulator, said content title server configured to provide orientation for content selected by one of said plurality of set top boxes.

20. The head end network system of claim 19 further comprising a plurality of content servers in communication with said content title server, said content servers having a plurality of video content formatted as said plurality of digital data.

21. The head end network system of claim 19 wherein said plurality of digital data comprises digital video.

22. The head end network system of claim 21 wherein said plurality of digital data comprises Internet data.

23. The head end network system of claim 22 wherein said plurality of digital data comprises telephony data.

REMARKS

I. New Claims

Support for the new independent claim 1, 11, and 19 and their related dependent claims is provided in discussions and references to Figure 3 on page 8, line 35 through page 11, line 24 and references to Figure 5 on page 13, line 12 through line 36 and the remainder of the patent application. The Examiner shall appreciate that the patent application should be reviewed in its entirety. However, the Examiner's attention is drawn to Figure 3 which provides a block diagram which supports the new claims. Figure 5 describes how bandwidth is allocated using the invention described in this application.

Additionally, the Examiner's attention is called to page 9, line 26 through page 10, line 1 which states:

> The series of encoders 51, 52, 53, ..., 58 each converts Ethernet data with internet protocol coming a respective content into an MPEG-2 bit-stream within a specified radio frequency bandwidth. Each encoder has a single radio frequency (RF) output line connected to the signal combiner 89 which stack the encoder output signals to form a single composite wideband signal which has been modulated by a group of quadrature amplitude data modulators resident in each encoder 91 also

connected to combiner 89 when multiple encoders are used. An up-converter 92 is used to stack digital channels into 6MHz bands and then to stack the 6 MHz bands among 6 MHz analog or digital channels as shown below in Fig. 5.

This paragraph in conjunction with the rest of the patent application provides support for the independent claims 1, 11 and 19.

II.   Prior Art

The Examiner has principally relied on the Gotwald patent 5,987,518 to reject Applicant's claims. With respect to the new claims, the Gotwald patent does not teach a plurality of encoders that converts digital data having a first protocol to a second protocol wherein each encoder generates a plurality of modulated digital channels with the digital data. Furthermore, each encoder of the present invention generates an encoder output which occupies an analog channel. Additionally, the Gotwald patent does not teach a signal combiner which stacks the encoder output from each encoder to generate a composite wideband signal.

The Examiner has previously stated that the Klopfer patent 5,790,171 teaches a plurality of encoders ganged together as shown in Figure 3 of the Klopfer patent. See Office Action dated 06/12/00, page 4 and page 5. The encoder 14 referred to by the Examiner in Column 6: line 65 through Column 7: line 4 of the Klopfer patent does not teach the elements of the Applicant's claims. The Applicant's claims describe an encoder which converts digital data having a first protocol to a second protocol and generates a plurality of modulated digital channels which occupy an analog channel that defines an encoder output. Additionally, the Klopfer patent does not teach a signal combiner which stacks the encoder output to generate a composite wideband signal.

During the prosecution of this patent application, the Examiner has cited the following prior art patents:

Table of Prior Art References

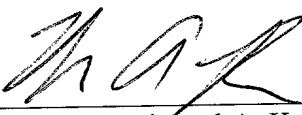| Patent No.	Author	Date
5,987,518	Gotwald	11/16/99
5,790,171	Klopfer et al.	8/4/98
5,729,549	Kostreski et al.	3/17/98
5,787,259	Haroun et al.	7/28/98
5,764,930	Staats	6/9/98
5,684,799	Bigham et al.	11/4/97
5,594,491	Hodge et al.	1/14/97
5,491,812	Pisello et al.	2/13/96
5,446,868	Gardea, II et al.	8/29/95
4,949,187	Cohen	8/14/90
4,506,387	Walter	3/19/85

Each of the identified prior art references has been reviewed. None of the above identified references either by themselves or in combination teach a plurality of encoders that converts digital data having a first protocol to a second protocol wherein each encoder generates a plurality of modulated digital channels which occupy an analog channel that defines an encoder output. Additionally, a signal combiner stacks the encoder output from each encoder to generate a composite wideband signal.

VII.   Request for Allowance

In view of the foregoing, reconsideration and an early allowance of this application are earnestly solicited. If any matter remain which could be resolved in a telephone interview between the Examiner and the undersigned, the Examiner is hereby respectfully requested to call the undersigned to expedite resolution of any such remaining matters.

Respectfully submitted,

Dated: May 14, 2001

By: _____
     Michael A. Kerr
     Reg. No. 42,722

Virtual Legal
P.O. Box 2345
Stateline, NV 89449
(775) 588-9498